

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DREW E. KIEFABER and JEFFREY R. RUMMLER

Appeal No. 97-0742
Application 08/427,775¹

ON BRIEF

Before LYDDANE, FRANKFORT and McQUADE, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1 through 21, all of the claims pending in the application.

The invention relates to "an apparatus for preventing condensation in machines processing web-like material" (specification, page 1). Claim 1 is illustrative and reads as

¹ Application for patent filed April 25, 1995.

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follows:

1. An apparatus for preventing condensation in machines processing a web-like material, comprising:

at least one component arranged within a processing unit, said at least one component having at least one surface in contact with and surrounded by ambient air; and

a heating element, said heating element increasing a temperature of said at least one surface of said at least one component, said heating element reducing a difference between said temperature of said at least one surface of said at least one component and a temperature of said ambient air surrounding said at least one component.

The references relied upon by the examiner as evidence of obviousness are:

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|------------------------|-----------|---------------|
| Mitter | 4,089,193 | May 16, 1978 |
| Ecker | 4,308,042 | Dec. 29, 1981 |
| Weimer et al. (Weimer) | 5,126,121 | Jun. 30, 1992 |

The appealed claims stand rejected under 35 U.S.C. § 103 as follows:

a) claims 1 through 18, 20 and 21 as being unpatentable over Mitter in view of Ecker; and

b) claim 19 as being unpatentable over Mitter in view of Ecker, and further in view of Weimer.

Mitter, the examiner's primary reference, discloses a textile web printing apparatus having "advancing means for advancing a textile web in a path, printing means for printing

onto the advancing web, and suction means arranged below the advancing textile web downstream of the printing means" (column 1, lines 45 through 49). The suction means draws the applied printing medium into the web to ensure sufficient penetration, thereby enhancing the durability of the printing. As shown in Figure 5, the suction means 40, 42 is located across from a hood 7 disposed above the advancing textile web. As described by Mitter,

[t]he hood 7 has an inner wall 72 and an outer wall 72a. The interior space between these walls is filled with thermally insulating material 70, and located in it are heating devices, here illustrated as resistance heating rods 71 which are so positioned as to heat the inner wall 72. . . .

Tubes 74 are arranged in the interior of the hood 7 and have outlet openings 174 which advantageously are directed against the inner wall 72. These tubes may be connected via a conduit L with a boiler W so that they are supplied with steam which issues through the openings 174. A thermostat T can be mounted on the outside of the hood 7 and be provided with a sensor f that senses the temperature of the inner wall 72; the thermostat T is connected via the connector A with a source of electrical energy, as are of course the heating rods 71. The temperature of the heating rods 71 may be automatically controlled by the thermostat T, which is connected with them as illustrated, in dependence upon temperature [sic] changes that are sensed by the sensor F. Having the openings 174 face away from the open end of the hood 7, has the advantage that the steam will be well distributed throughout the interior of the hood, and the purpose of heating the inner wall 72 is, of course, to prevent condensation of the steam on the inner wall 72.

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When the steam is drawn by the suction of the nozzle 42 through the web 2, a certain amount of steam condensation takes place on and in the web, which tends to thin the printing ink or paste, thus facilitating a drawing-in of the thinned ink into the body of the web 2, and also improving the penetration of the ink into the individual fibers of the web 2.

A further advantage of this construction is the fact that the web 2 itself becomes warmed as the steam is drawn through it; this is advantageous because the web passes from the printing machine into a steaming device (not shown) wherein it is subjected to a steaming operation. Since the web is already prewarmed by the steam that is drawn out of the hood 7 and through the web by the suction nozzle 42, it will enter the steaming device at a temperature that is sufficiently high to prevent significant condensation of the steam in the steaming device on the web 2 [column 4, line 29 through column 5, line 8].

As implicitly conceded by the examiner (see page 3 in the answer, Paper No. 13), the Mitter apparatus does not meet the limitations in independent claim 1 relating to the "at least one surface in contact with and surrounded by ambient air" and the "heating element" associated therewith to increase the temperature of the surface and reduce the temperature difference between the surface and the ambient air. In this regard, although the inner wall 72 of Mitter's hood 7 is associated with heating rods 71 to increase its temperature, no surface of this wall is in contact with and surrounded by ambient air during the operation of the apparatus.

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Ecker discloses a heat pump system designed to prevent freeze-up of the outdoor heat exchanger typically found in such systems. As explained by Ecker,

the temperature of the boiling refrigerant brings the temperature of the heat exchanger coils below the dew point of the ambient air so that moisture condenses on the coils. Further decrease in the temperature below the freezing point then freezes the condensed moisture, forming ice. The ice builds up and eventually completely blocks the flow of air through the heat exchanger [column 1, lines 36 through 43].

Ecker's solution to this problem is to dispose the outdoor heat exchanger in a heat exchange fluid circuit which warms the heat exchanger until its temperature is above the dew point of the ambient air (see, for example, column 8, lines 11 through 32).

According to the examiner,

[i]n view of the teaching of Ecker, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the web printing machine of Mitter with heated fluid circulated to any structural parts of the printing machine that is [sic, are] exposed to a warmer ambient air so as to prevent condensation of moisture from occurring [answer, page 4].

The combined teachings of Mitter and Ecker, however, do not justify the examiner's conclusion of obviousness. Ecker's solution to the problem of condensation freeze-up on an outdoor heat pump component has little, if any, relevance to the textile web printing apparatus disclosed by Mitter. Although Mitter is

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concerned with preventing condensation of steam on the inner wall 72 of hood 7, there is nothing in this reference, or in Ecker, which would indicate that condensation on other parts of the printing apparatus which are in contact with and surrounded by ambient air poses a problem. In this light, it is apparent that the examiner has engaged in an impermissible hindsight reconstruction of the appellants' invention wherein the claims have been used as a template to selectively pick and choose from among isolated disclosures in the prior art. Thus, even if Ecker is assumed for the sake of argument to be analogous art (the appellants argue that it is not), it does not overcome the above noted deficiency of Mitter vis-a-vis the subject matter recited in claim 1.

Accordingly, we shall not sustain the standing 35 U.S.C. § 103 rejection of claim 1, or of claims 2 through 18, 20 and 21 which depend therefrom, as being unpatentable over Mitter in view of Ecker.

Nor shall we sustain the standing 35 U.S.C. § 103 rejection of claim 19, which ultimately depends from claim 1, as being unpatentable over Mitter in view of Ecker, and further in view of Weimer. In short, Weimer's disclosure of an inductive coil heating means in a reactor for producing aluminum nitride (see

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column 8, lines 20 through 56) does not cure the foregoing shortcomings of the basic Mitter-Ecker combination.

The decision of the examiner to reject claims 1 through 21 under 35 U.S.C. § 103 is reversed.

REVERSED

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| WILLIAM E. LYDDANE |) | |
| Administrative Patent Judge |) | |
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| CHARLES E. FRANKFORT |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
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| JOHN P. McQUADE |) | |
| Administrative Patent Judge |) | |